CLAIMS:

1. Voltage converter comprising:

- an inductive circuit (L) for storing energy during an inductive magnetizing mode and transferring energy during an inductive de-magnetizing mode;
- at least two non-inverting branches (12,13,14) for providing at least two non-inverted output voltages (Va,Vb,Vc); and
- an inverting branch (15) for providing an inverted output voltage;

the inverting (15) and non-inverting (12,13,14) branches being parallely coupled to an output (10) of the inductive circuit (L), the inductive circuit being arranged to transfer energy to the inverting branch (15) and to one of the at least two non-inverting branches (12,13,14), wherein the inverted voltage (Vinv) and the corresponding non-inverted output voltage (Va,Vb,Vc) of the one of the at least two non-inverting branches (12,13,14) are having an opposite polarity and a substantially equal magnitude.

2. Voltage converter according to claim 1, wherein the inverting branch (15) comprises a capacitive circuit (Cpump) for storing the energy that is transferred during the inductive de-magnetizing mode and for releasing the transferred energy during the inductive magnetizing mode.

3. Voltage converter according to claim 2, wherein the capacitive circuit (Cpump) is arranged to receive the transferred energy through an input (In) of the capacitive circuit (Cpump) while an output of the capacitive circuit (Out) is coupled to a ground voltage (GND) and wherein the capacitive circuit (Cpump) is further being arranged to release energy through the output (Out) while the input (In) is coupled to the ground voltage (GND).

4. Voltage converter according to claim 3, comprising first and second switch devices for respectively coupling the input (In) and the output (Out) of the capacitive circuit to the ground voltage (GND) during respectively the inductive magnetizing and de-magnetizing mode.

5. Voltage converter according to claim 1, wherein the voltage converter further comprises a voltage down conversion circuit (80) through which an input voltage (Vi) is applied to the inductive circuit (L).

6. A voltage converter according to claim 5, wherein the voltage down-conversion circuit (80) comprises third and fourth switch devices (S3,S4) for alternately applying the input voltage (Vi) and a ground voltage (GND) to the inductive circuit (L).

7. A voltage converter according to claim 1, wherein at least one of the at least two branches (12,13,14) comprises a further switch device (S5,S6) for activating the branch.

8. A voltage converter according to each one of the previous claims, wherein the voltage converter further comprises control means (82) for controlling the switch devices.

9. A power management unit comprising a voltage converter according to each one of the previous claims.

10. A mobile device comprising a power unit according to claim 7.